REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the preceding amendments and the following remarks.

The Examiner indicates that claims 2, 7 and 28-30 would be allowable if rewritten in independent form. Applicants herein add new claims 40-43 which correspond to claims 2 and 28-30 rewritten in independent form. Applicants would like to thank the Examiner for the indication of allowable subject material.

Claims 1 and 25-27 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,415,003 to Raghavan.

The subject invention results from the realization that an improved communications system which can compensate for the unpredictable transfer function due to component mismatches and parasitic elements can be achieved with a calibration system which is responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of at least one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function of the transmission medium.

The claimed calibration system for a communications system as recited in claim 1 uses a calibration circuit responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of either the transmitter or receiver circuit to compensate for variations in the transmission signal. During a calibration cycle of the claimed communication system, the transmitter circuit sends a predefined signal through the transmission medium. The predefined signal is altered when the transmitter circuit transmits the signal through the transmission medium before it is received by the receiver circuit. The calibration circuit uses the digital output of the

receiver circuit to adjust the reference signal level of either the transmitter or receiver circuit, such as reference signal level 28 as shown in Fig. 1 of the applicants' specification which is supplied to receiver circuit 16. Therefore, the claimed calibration circuit adjusts the reference signal level of either the transmitter or receiver circuits to compensate for the unpredictable gain of the transfer function of the transmission medium. See the Applicants' specification at page 9, lines 13-14.

In contrast to the subject invention, Raghavan fails to teach, disclose or suggest a calibration circuit responsive to an altered reference signal level, or a transmission medium having an unpredictable transfer function as claimed by Applicants.

Raghavan relates to a digital baseline wander correction circuit that adjusts the transmitted signal to compensate for predictable cable losses during transmission. Amplifier 201 compensates for the loss of signal resulting from transmission channel 10. Raghavan discloses that its signal loss in transmission channel 10 depends primarily on known cable length and is not dependent on other elements of transmission channel. The known values of the gain g for several cable lengths are provided in Table 1 of Raghavan. *See* Raghavan at Col. 6, lines 23-49. Thus, Raghavan does not disclose a transmission medium having an unpredictable transfer function as claimed by Applicants.

Raghavan also fails to disclose an altered reference signal from the transmitter circuit as claimed by Applicants. Gain control 208, which the Examiner alleges is a calibration circuit, compares the modulus of sample a_k' from equalizer 204 with a target threshold value and adjusts the gain of amplifier 201 in response to the comparison. Raghavan fails to disclose that the target threshold value is an altered reference signal from the transmitter circuit. Also, sample a_k' is not an altered reference signal from the transmitted circuit, but rather the main component, a_k, of the transmission signal r_k after it is amplified by amplifier 201 and the channel distortion is countered

by equalizer 204. *See* Raghavan at col. 6, line 35 to col. 7, line 32. Thus, Raghavan fails to teach, disclose or suggest Applicant's claimed transmission signal and an altered reference signal from the transmitter circuit.

In para. 2 of the Office Action dated January 23, 2006, the Examiner asserts that signal r_k is the altered reference signal, but fails to indicate the transmission signal. However, as shown above, the signal r_k is clearly the transmission signal, not an altered reference signal.

As shown above, Raghavan does not teach, suggest, or disclose each and every element of the applicants' invention, namely, a calibration circuit responsive to an altered reference signal of the transmitter circuit altered by the transmission medium for adjusting the reference signal level of one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function.

Accordingly, claim 1 is patentable and allowable under 35 USC §102(e) over Raghavan. Because claims 25-27 depend from an allowable base claim, claims 25-27 are allowable under 35 USC §102(e) over Raghavan.

Claim 3 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,415,003 to Raghavan or under 35 U.S.C. §103(a) as allegedly being unpatentable in view of Raghavan, claims 4, 6, 8 and 31-34 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Raghavan in view of U.S. Patent No. 5,883,907 to Hoekstra, and claims 5 and 9 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Raghavan in view of Hoekstra, and further in view of U.S. Patent No. 6,304,594 to Salinger.

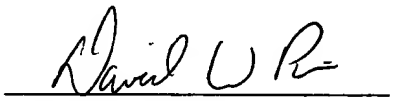
As described above, Raghavan does not teach, suggest or disclose each and every element of the invention as recited in Applicants' claim 1. Because each of the claims in these rejections depends from claim 1, they are patentable for at least the reasons stated above, and are further

patentable since they include one or more additional features.

Each of the Examining Attorney's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for publication. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates collect in Waltham, Massachusetts at (781) 890-5678.

Respectfully submitted,



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